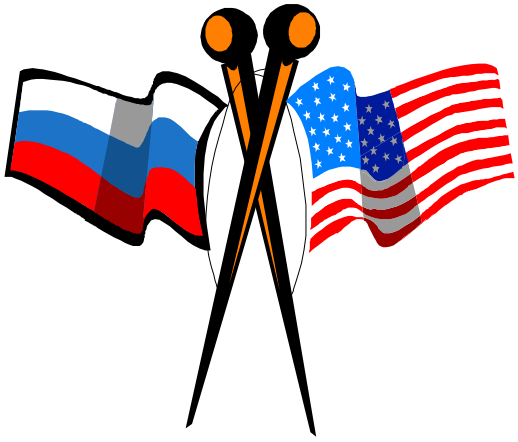

Joint Coordinating Committee for Radiation Effects Research

—What is the JCCRER?—

JCCRER is the Joint Coordinating Committee for Radiation Effects Research. This is a bilateral government committee representing agencies from the United States and the Russian Federation tasked with coordinating scientific research on the health effects of exposure to radiation in the Russian Federation.

—Why is the JCCRER important?—

Radiation research with the Russian Federation provides us with a unique opportunity to learn more about possible risks to groups of people from lengthy exposure to radiation. This could include people receiving exposure from uranium mining, operations of nuclear facilities, transport and disposal of radioactive materials, the testing and dismantling of nuclear weapons, radiation accidents, and grossly contaminated sites or facilities.

Current radiation health effects research conducted jointly by U.S. & Russia under the auspices of the JCCRER is focused on populations exposed to radioactive contamination from the MAYAK Production Association. In 1948, the nuclear weapons production complex "MAYAK" was established by the Soviet Union in the Southern Urals, about 100 km northeast of the city of Chelyabinsk. Enormous amounts of radioactive materials were released into the environment after a series of accidents at the MAYAK complex between 1948 and 1967. As a result, thousands of square kilometers have been contaminated and hundreds of thousands of people have received significant radiation exposures. Furthermore because of limited and inadequate (by today's standards) radiation protection measures and procedures, thousands of MAYAK workers were seriously overexposed to radiation.

The southern Urals' database may provide an opportunity to answer the question of whether chronic low-level exposures pose a risk different from previously assumed. Most of our knowledge of health effects and risks associated with radiation exposures is based on studies of atomic bomb survivors in Japan. The atomic bomb survivors, however, were exposed to a very short burst of external radiation, unlike the pattern of exposure normally encountered or expected in the nuclear industry and other uses of radiation. The Southern Urals' populations, on the other hand, experienced chronic exposures over a much longer period. The exposures were also from both external radiation and internally deposited radioactive compounds. Definitive studies on the Southern Urals populations, coupled with comparisons with U.S. nuclear worker data, are expected to play a key role in future reassessments of radiation protection standards and regulations in the U.S. and worldwide. Thus, the preservation, restoration and analysis of radiation exposure and medical and environmental data in the Southern Urals are extremely important to the United States and to the World.

Given these opportunities to advance our knowledge of the human and environmental effects of radiation, the Governments of the United States and the Russian Federation signed, on January 14, 1994, an Agreement on Cooperation in Research on Radiation Effects for the Purpose of Minimizing the Consequences of Radioactive Contamination on Health and the Environment.

—What are the principal areas of cooperation?—

Under the provisions of the Agreement, the associated work deals broadly with research in the field of effects of ionizing radiation. Currently, three different research directions are supported, namely: populations studies (direction 1); worker studies (direction 2); and emergency management (direction 3). The various projects under each direction are jointly conducted by both U.S. and Russian principal investigators and their respective teams of researchers.

Direction 1: "Medical Aspects of Radiation Exposure Effects on Population"

Project 1.1 "Dose Reconstruction for the Population Subjected to Radiation in the Urals" Objectives: To reconstruct, validate and analyze data on individual radiation doses received by the population so that these can be used in studies assessing the risks of developing cancer in exposed populations.

Project 1.2 "Risk Estimation of the Non-Cancerous and Cancerous Effects and the Results of Actual Observations of the Population Health in the Region of the Industrial Association "MAYAK" Objectives: To conduct studies to determine the risk of cancer in population groups exposed to radioactive contaminants in the region, to characterize the quality and validity of the data for conducting such studies, and to preserve the existing data using modern technologies.

Project 1.3 "Source Term Determination" Objectives: To compliment the population dose reconstruction project by providing additional information on radionuclide contamination of the Techa River.

Direction 2: "Medical Consequences of Occupational Exposure to Radiation"

Project 2.1 "Metabolism and Dosimetry of Plutonium Industrial Compounds" Objectives: To conduct a joint analysis of the data collected by the U.S. Transuranium Registry (USTUR) and the dosimetry registry at MAYAK (DRMIA) on deceased people with occupational exposure to radiation. The results would be useful for validating and improving radiation protection standards.

Project 2.2 "Risk Estimation for Cancerous Effects of Occupational Exposure" Objectives: To determine risk estimates for cancer as a result of prolonged occupational exposure to radiation, from both external sources and internally deposited radioactive compounds.

Project 2.3 "Non-Cancerous Effects of Occupational Exposure to Radiation" Objectives: To validate and analyze the data on acute and chronic effects of radiation, other than cancer, observed in a large number of workers at the MAYAK facility.

Project 2.4 "Reconstruction of Individual Doses of Exposure to MAYAK Workers" Objectives: To reconstruct, validate and analyze doses of radiation received by individuals included in Projects 2.2 and 2.3.

Direction 3: "Information Technologies in Research on Radiation Effects and Decision-Making Support"

Under this direction, a ***"United States - Russian Federation Workshop on Responses to Radiation Accidents"*** was conducted recently. Objectives: To identify further areas of collaborative research in the fields of accident consequence management, joint exercises, and thyroid disease and combined injury (radiation and trauma).

New Initiatives: DOE Office of International Health Programs awarded 5 cooperative agreements in August 1998 for joint U.S.-Russian feasibility studies aimed at adding a molecular epidemiologic component to the ongoing epidemiologic and dose reconstruction work of the JCCRER. The new feasibility studies will be jointly conducted by FIB-1 and U.S. institutions and include:

- Epidemiologic Study of Occupational Chronic Exposure to Radiation and Reproductive Health;

- Improved Dosimetry and Risk Assessment for Plutonium-Induced Lung Disease Using a Microdosimetric Approach;
- Establishment of a Repository Containing Tissues and Organs of Deceased Workers of MAYAK Who Were Exposed to Actinide Elements;
- Molecular Epidemiology & Lung Cancer in Workers; and
- Feasibility Assessment of Biodosimetry & Molecular Epidemiology Studies Among MAYAK Workers.

—What is the role of the U.S. JCCRER?—

The U.S. JCCRER functions as a coordinating body for projects on health effects of radiation with the Russian Federation, funded by member agencies. It ensures that there is no overlap/duplication of similar projects on the same population. This includes:

- promoting joint U.S./Russian workshops;
- encouraging similar projects on different populations; and
- facilitating integration of projects being funded by different agencies.

Note: The U.S. JCCRER does not function as a manager or overseer of projects. It is up to each funding agency to do this.

—How does the JCCRER function?—

The day-to-day business is conducted by an Executive Committee (EC), consisting of representatives of JCCRER members. The EC ensures direct communication among the partners within the Agreement, coordinates the work of national organizations, and ensures the effective and efficient implementation of JCCRER goals and principles. The full JCCRER generally meets only once a year.

—Which institutions in Russia are currently participating in JCCRER activities?—

- Nuclear Safety Institute (IBRAE) of Russian Academy of Sciences, Moscow;
- Branch #1 of Moscow Biophysics Institute (FIB-1), Ozersk;
- Mayak Scientific and Production Association (MAYAK), Ozersk;
- Urals Research Center for Radiation Medicine (URCRM), Chelyabinsk;
- Institute of Marine Transport Hygiene, St. Petersburg; and
- Institute of Metal Physics, Ekaterinburg.

—Who are the Members of the JCCRER?—

Current U.S. JCCRER Members:

U.S. Department of Energy (DOE), Co-chair (Acting)
U.S. Nuclear Regulatory Commission (NRC)
U.S. Dept. of Health & Human Services/U.S. Centers for Disease Control (CDC)
U.S. Dept. of Defense (DoD)
U.S. Environmental Protection Agency (EPA)
U.S. National Aeronautics and Space Administration (NASA)

Current Russian JCCRER Members:

Ministry for Civil Defense Affairs, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM), Co-chair
Ministry of Atomic Energy (MINATON)
Ministry of Health (MINZDRAV)

—For More Information—

Additional Information about the JCCRER and e-mail links to contact persons can be obtained through the following home pages:

U.S. Department of Energy (DOE)
International Health Programs (IHP)

http://tis.eh.doe.gov/ihp

Russian Academy of Sciences
Nuclear Safety Institute (IBRAE)

http://ibraent.ibrae.ac.ru/JCCRER/

or by contacting:

U.S. Department of Energy
Office of International Health Programs
EH-63 / 270CC
19901 Germantown Road
Germantown, MD 20874-1290, USA
(301) 903-7582